

Name _____ Period _____

Chapter 51: Animal Behavior

Overview

1. How is *behavior* defined?
3. What is the difference between *proximate* and *ultimate causation*?
8. *Nicholas Tinbergen's* work with the stickleback fish is a classic study. Explain what he found. Use the terms *fixed action pattern* and *sign stimulus* in your response.



9. Define these behavior terms:

Definition	Example
<i>kinesis</i>	
<i>taxis</i>	

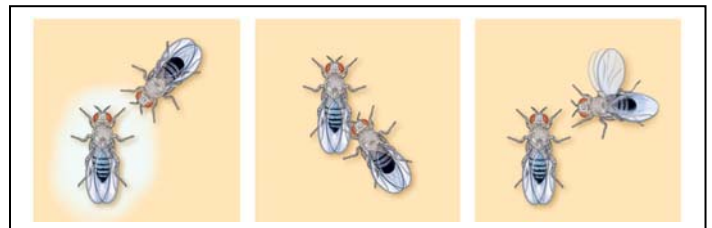
10. Explain what is meant by a *circadian clock* and *circadian rhythms*. Identify two behaviors, either plant or animal, that demonstrate a circadian rhythm. (You may need to refer to Chapter 49 or Chapter 36 for examples.)

11. Discuss two navigational strategies used by birds to migrate.

12. Animals communicate in various ways. Discuss at least **two** specific examples using different organisms.

13. Notice the pictures that show fruit fly courtship behavior

What different modes of communication are used by the fruit fly?



14. *Karl von Frisch* studied European honeybees. What are the two types of dances that a returning worker bee does, and what information does each dance convey? Use a labeled sketch to describe each dance.
15. What are *pheromones*? Give three specific types of information that can be transmitted through pheromones.
16. What is the difference between *innate* and *learned* behavior?
17. What is meant by *fitness*? How can *habituation* increase fitness?
18. Describe the process of *imprinting*, and explain what is meant by *sensitive* or *critical period*.



21. There are several types of learning. What occurs in *spatial learning*?
22. What are two types of *associative learning*?
23. What occurs in *operant conditioning*?
24. What is *cognition*? Give three examples of cognition in animal species
25. Many bird songs are learned during a critical period. What will happen if a white-crowned sparrow does not hear the song of its species during this time?
26. Based on *cross-fostering* and *human twin studies*, what are the two factors that contribute significantly to behavior?

27. This concept looks at some very interesting ways that genetic changes affect behavior. Several important case studies that show a genetic component to behavior are presented. Take time to read and enjoy them. The study of voles and their mating behaviors is often discussed in other science articles. To return to fruit fly mating, a single gene called *fru* controls male mating behavior. If males lack a functional *fru* gene (short for *fruitless*), what happens?

And what occurs if females are genetically manipulated to express this gene?

28. What is *foraging behavior*?
29. What is proposed by the *optimal foraging theory*? Explain it in terms of cost and benefit, and cite two examples from your text.
31. Explain each of these mating systems:
- promiscuity**
 - monogamy**
 - polygamy**
 - polygyny**
 - polyandry**
32. Explain two factors that may be important in determining the evolution of these systems, and apply each factor to a particular species.

34. There are two types of sexual selection. Explain each of them.
- intersexual selection**
- intrasexual selection**
35. What is *agonistic behavior*? Give one example of this behavior that is not in your book.
36. What is *altruism*?
37. Explain the evolutionary advantage to a population of having members who exhibit *altruistic behavior*.
38. *Altruism* may reduce the fitness of an individual—for example, by making that individual more obvious to a predator. Explain this behavior using the concept of *inclusive fitness*.
39. Contrast kin selection and reciprocal altruism.